

**REMARKS**

Claims 1-17 are all the claims pending in the application.

In the last Office Action Claims 1-17 inclusive were objected to because of informalities. Claims 2-4, 6 and 17 were objected to as being dependent upon a rejected base claim. Claims 5-10 and 12-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Reed *et al.*

In paragraph 7 of the Office Action it was stated that “Claims 1-4, 11 and 17 if dependent upon Claim 11 would be allowable if rewritten to overcome the objections in 112, second paragraph, rejections.” It is not seen how claim 11 can be dependent upon itself. Furthermore, claim 17 is independent and would not be dependent upon claim 11.

In the last Office Action Claims 5-10 and 12-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Reed *et al.*

In order to distinguish the burner of the present invention from the patent to Reed *et al.* Claim 5 has been amended by inserting the term “radially” before the expression “protruding from an end (12a)...”. Proper support for this amendment can be found in the specification from page 13, line 24 to page 14, line 3 and Figure 3 of the drawings. The burner disclosed in Reed *et al.* comprises a substantially cylindrical duct (22) for feeding air, a plenum space (25) and a plurality of jet pipes (46, 46A) protruding from the plenum space (25). All pipes (46, 46A) end in a corresponding single outlet nozzle. See for instance Reed *et al.* figures 4-7 and the corresponding description. Should the plenum space (25) disclosed in Reed (et al.) be considered as part of the duct (22) itself, as it appears evident for instance from figures 5 and 7,

then it should be assumed that such a plenum space 25 is indeed an end of the duct 22. The burner claimed in independent Claim 5 would thus differ substantially from the disclosure of Reed *et al.* since all of the features recited in the characterizing portion of Claim 5 are clearly and unambiguously not disclosed in or suggested by the teachings of Reed *et al.*

According to the present invention, at least one collector protrudes from an end of the duct and is provided, near a lower end of the same, with a plurality of nozzles distributed along a perimeter thereof and arranged so as not to lay the one upon the other. In this respect, it is noted that that the jet pipes 46, 46A cannot be compared or confused with corresponding (gas) collectors since they are not at all suitable to collect, i.e. contain, the air flow flowing within the burner. On the contrary, they are shaped in order to make such a gas flow to exit the burner as fast as possible, in the form of air jets.

Moreover, even if the pipes (46, 46A) were considered as being collectors according to the present invention, it is unquestionable that the presence of nozzles distributed along the perimeter of the cylindrical wall of the pipes (46, 46A) is totally missing from Reed *et al.*

Should, on the contrary, the plenum space (25) disclosed in Reed *et al.* be considered as an element distinctive from the duct (22), which is enclosed by the bottom plate (23) and the duct (22) itself (see column 4, lines 35-26), then it might be asserted that such a plenum space (25) is a collector protruding from the duct (22).

However, in this case the burner claimed in independent Claim 5 would substantially differ from the disclosure of Reed *et al.* In fact, at least the essential feature of a radially protruding collector is clearly and unambiguously not disclosed or suggested by the patent to

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Reed *et al.* Reed *et al.* clearly teaches a plenum space (25) axially extended with respect to the duct (22) (see for instance figure 5-7).

Moreover, it is noted that according to this questionable interpretation of the Reed *et al.* patent the nozzles belonging to pipes (46, 46A) are distributed throughout the height of the plenum chamber (25) and are thus not confined near the lower end of the collector as called for in Claim 5.

It follows that in both cases, the burner disclosed in Reed *et al.* suffers from the same drawbacks referred to in the prior art section of the present application (see in particular page 5, lines 2-21) and thus the technical problem to be solved by the present invention is that of providing a burner for secondary reforming reactions which does not require high operation and maintenance costs.

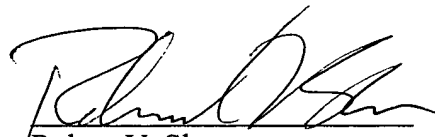
For the reasons set forth above it is submitted that the claims of the present application are not disclosed or suggested by Reed *et al.* Therefore the subject matter of independent Claim 5 as well as the subject matter of Claims 6-17 inclusive is considered to be patentable over Reed *et al.* Therefore, it is respectfully requested that Claims 1-17 inclusive be allowed and the application passed to issue forthwith.

If for any reason the Examiner is unable to allow the application on the next Office Action and feels that an interview would be helpful to resolve any remaining issue, the Examiner is respectfully requested to contact the undersigned attorney for the purpose of arranging such an interview.

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Respectfully submitted,



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